1. Using an interval or intervals, describe all the x-values within or including a distance of the given values.

   No less than 6 units from the number 9.

   A. $(-\infty, 3) \cup (15, \infty)$

   B. $[3, 15]$

   C. $(3, 15)$

   D. $(-\infty, 3] \cup [15, \infty)$

   E. None of the above

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2. Using an interval or intervals, describe all the x-values within or including a distance of the given values.

   Less than 5 units from the number 7.

   A. $(-\infty, 2) \cup (12, \infty)$

   B. $(2, 12)$

   C. $[2, 12]$

   D. $(-\infty, 2] \cup [12, \infty)$

   E. None of the above

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3. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-9 + 9x \leq \frac{77x + 6}{8} < -9 + 7x$$

   A. $(-\infty, a] \cup (b, \infty)$, where $a \in [12.75, 20.25]$ and $b \in [0.75, 6.75]$

   B. $(a, b]$, where $a \in [13.5, 16.5]$ and $b \in [0.75, 4.5]$

   C. $[a, b)$, where $a \in [12, 21.75]$ and $b \in [-0.75, 4.5]$

   D. $(-\infty, a) \cup [b, \infty)$, where $a \in [13.5, 16.5]$ and $b \in [1.5, 5.25]$

E. None of the above.

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4. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$6 - 6x < \frac{-32x - 5}{7} \leq 9 - 5x$$

A. $[a, b)$, where $a \in [-10.5, -3]$ and $b \in [-30.75, -21]$

B. $(-\infty, a] \cup (b, \infty)$, where $a \in [-6, -3.75]$ and $b \in [-23.25, -19.5]$

C. $(a, b]$, where $a \in [-7.5, -3.75]$ and $b \in [-28.5, -21]$

D. $(-\infty, a) \cup [b, \infty)$, where $a \in [-6, -1.5]$ and $b \in [-23.25, -18.75]$

E. None of the above.

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5. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-3 + 7x > 9x \text{ or } 8 + 9x < 10x$$

A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-12.75, -6.75]$ and $b \in [0, 3]$

B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-6.75, 3.75]$ and $b \in [6.75, 10.5]$

C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-2.25, 2.25]$ and $b \in [3.75, 9]$

D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-9.75, -4.5]$ and $b \in [-7.5, 6.75]$

E. $(-\infty, \infty)$

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6. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-3}{7} + \frac{6}{4}x > \frac{7}{9}x + \frac{5}{5}$$

A. (a, ∞), where $a \in [0.75, 3.75]$

B. $(-\infty, a)$, where $a \in [-5.25, 0.75]$

C. $(-\infty, a)$, where $a \in [0, 3]$

D. (a, ∞), where $a \in [-4.5, 0]$

E. None of the above.

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7. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-8 + 3x > 5x \text{ or } -9 + 3x < 6x$$

A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-7.5, -3.75]$ and $b \in [-5.25, -2.25]$

B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-9.75, 0]$ and $b \in [-6, -0.75]$

C. $(-\infty, a) \cup (b, \infty)$, where $a \in [0.75, 5.25]$ and $b \in [2.25, 9]$

D. $(-\infty, a] \cup [b, \infty)$, where $a \in [0.75, 3.75]$ and $b \in [2.25, 6.75]$

E. $(-\infty, \infty)$

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8. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-10x - 7 < 5x + 6$$

A. (a, ∞), where $a \in [0.5, 1.4]$

B. $(-\infty, a)$, where $a \in [-2.31, -0.12]$

C. (a, ∞), where $a \in [-1.6, -0.2]$

D. $(-\infty, a)$, where $a \in [0.11, 1.31]$

E. None of the above.

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9. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-9x - 8 \leq -7x + 4$$

A. $[a, \infty)$, where $a \in [-6, -1]$

B. $(-\infty, a]$, where $a \in [2, 11]$

C. $(-\infty, a]$, where $a \in [-8, -4]$

D. $[a, \infty)$, where $a \in [2, 7]$

E. None of the above.

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10. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-9}{4} + \frac{4}{5}x < \frac{8}{6}x + \frac{9}{2}$$

A. $(-\infty, a)$, where $a \in [-14.25, -11.25]$

B. $(-\infty, a)$, where $a \in [10.5, 16.5]$

C. (a, ∞), where $a \in [9.75, 13.5]$

D. (a, ∞), where $a \in [-15, -10.5]$

E. None of the above.
